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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,776	09/30/2003	Jimmie Earl DeWitt JR.	AUS920030481US1	6262
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IBM CORP (YA)				
C/O YEE & ASSOCIATES PC				
P.O. BOX 802333				
DALLAS, TX 75380				
EXAMINER				
VU, TUAN A				
ART UNIT		PAPER NUMBER		
2193				
NOTIFICATION DATE		DELIVERY MODE		
06/15/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptonotifs@yeciipaw.com

### Office Action Summary

**Application No.**

10/675,776

**Applicant(s)**

DEWITT ET AL.

**Examiner**

TUAN A. VU

**Art Unit**

2193

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1.6, 26, 29-30, 32, 34-35, 38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1.6, 26, 29-30, 32, 34-35, 38-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is responsive to the Applicant's response filed 5/7/2010.

As indicated in Applicant's response, no claims have been amended, and claims 49-53 canceled. Claims 1, 6, 26, 29-30, 32, 34-35, 38-39 are pending in the office action.

The Terminal Disclaimers filed (4/20/10) have been considered and currently prosecuted with a state of "disapproved".

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6, 21, 25 of copending Application No. 10/675777 (hereinafter '777), now patented as USPN: 7,395,527.

Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following observations.

**As per instant claims 1, 32, '777** claims 6, 21, 25 also recite determining for a instruction during execution for a association of an indicator associated with receiving a bundle or instruction in a instruction cache; associating a counter based on such determination and incrementing a counter in response to the indicator association with the instruction or event associated with the indicator. The event counting and instruction cache as recited by '777 are construed as obvious representation to a runtime indicator (leading to a counter increment, in which incrementing is count of number of instructions execution) and sending from the cached instruction for execution of the instant claims. Further, '777 does not recite 'spare bit' for indicator identifying whether the instruction is to be monitored, but based on the indicator received into a cache, a bit type implementation as a slot within an received instruction would have been a obvious feature, enabling a monitoring to receive the instruction and increment a counter based on '777 paradigm.

4. Claims 1, 32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 17 of copending Application No. 10/675872 (hereinafter '872), now patented as USPN: 7,373,637.

**As per instant claims 1, 32, '872** claims 3, 17 also recite instruction to be monitored and sent from cache instruction, determining whether an instruction in execution is related with an

runtime range 'indicator'; and counting each event associated with the instruction if the instruction is associated with that range indicator. Even though '872 does not recite receiving bundle into a instruction cache and sending the received bundle for execution, said limitation of instruction with associated indicator would made the instruction cache receiving and sending obvious steps within runtime based on instruction being cached in view of the above known concept, and the incrementing responsive to association of instruction with the indicator. Even though '872 explicitly recites that the indicator is a location within contiguous range, this location-within- range limitation would be a obvious representation of any runtime indicator that would characterizes as an event deemed for the counter to be incremented (in which incrementing in terms of count of number of instructions execution) in view of the above association determination. Further, '872 does not recite 'spare bit' for indicator identifying whether the instruction is to be monitored, but based on the indicator received into a cache, a bit type implementation as a slot within an received instruction would have been a obvious feature, enabling a monitoring to receive the instruction and increment a counter based on '872 paradigm.

5. Claims 1, 32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 12, 23 of copending Application No. 10/682385 (hereinafter '385).

**As per instant claims 1, 32,** '385 claims 1, 12, 23 also recite executing instructions and detecting indicators that specify counting of events associated with the executing (Note: even though '385 recites data values in memory specifying counting event, a runtime event such as those memory indicators can be analogous to on runtime indicator of the instant claim); and

counting each event associated with indicators. At the time the invention was made, expediting execution using instruction cache associated with profiling was known concept. Even though '385 does not recite receiving bundle into a instruction cache and sending the received bundle for execution, said limitation of executing instructions associated with indicators would made the instruction cache reception and the sending obvious steps within runtime based on instruction being cached in view of the above known concept, and the incrementing responsive to association of instruction with the indicator. Even though '385 explicitly recites that counting events associated with execution based on detection of value indicators, this limitation would be a obvious representation of any runtime indicator that would characterizes as an event deemed for the counter to be incremented (in which incrementing is in terms of count of number of executions) in view of the above association determination. Further, '385 does not recite 'spare bit' for indicator identifying whether the instruction is to be monitored, but based on the indicator received into a cache, a bit type implementation as a slot within an received instruction would have been a obvious feature, enabling a monitoring to receive the instruction and increment a counter based on '385 paradigm

Claims 6, 26, 29-30, 34-35, 38-39 are also rejected for not curing to the conflicting issues as raised above.

***Allowable Subject Matter***

6. Claims 1, 32 stand rejected in the Double patenting Rejection as set forth above; yet contain allowable subject matter in view of the teachings provided via Fig. 31 of the Specifications; but would be allowable if rewritten in a form including or reasonably conveying functionality of all of the constituents (see Note below) of the 'instruction cache unit' described

in the pertinent section. The allowable subject matter revolves around the following scenario, pending the inclusion of *range registers, counter increment based on range execution* of Figure 31:

A instruction cache unit (ICU) having a counter therein that is incremented responsive to this ICU receiving of a spare bit and an instruction, the spare bit as an indicator to be determined by the ICU as to whether the instruction to be one to be monitored by a performance monitor unit, wherein upon receiving a signal from the ICU in response to the determination, the performance unit increments a counter implemented inside the ICU in conjunction with sending by the ICU of the instruction to a functional unit.

Note: the constituents of the ICU depicted in **Figure 31**, deemed allowable based on the previously considered Appeal Brief (per 9/30/2009), based on the emphasis expressed therein by the arguments regarding the Inventor's particular way of implementing an "instruction cache unit" being distinguishable over any conventional instruction cache, include (see Specifications):

*In this example, program 3100 includes instruction range 3102 and 3104. Each of these ranges has been identified as ones of interest for monitoring. Each of these ranges is set within an instruction unit, such as instruction cache unit 214 in FIG. 2. Each range is used to tell the processor the number of instructions executed in a range, as well as the number of times a range is entered during execution of program 3100.*

*Instruction cache unit 3106 uses range registers 3108 to define instruction ranges. These registers may be existing registers or instruction cache unit 3106 may be modified to include registers to define instruction ranges. These ranges may be based on addresses of instructions. Additionally, range registers 3108 may be updated by various debugger programs and performance tools.*

*If an instruction is executed in a range, such as instruction range 3102 or instruction range 3104, a counter is incremented in instruction cache unit 3106.*

### **Conclusion**

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (571) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on (571)272-3759.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 ( for non-official correspondence - please consult Examiner before using) or 571-273-8300 ( for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tuan A Vu/

Primary Examiner, Art Unit 2193

June 08, 2010